# FOREST ROAD EXCISE TAX SUMMARY SHEET

**Region:** Pacific Cascade

**Timber Sale Name:** Throw a Bone

**Application Number:** 30-076144

## Excise Tax Applicable Activities

**Construction:** _____ **linear feet**
*Road to be constructed (optional and required) but not abandoned*

**Reconstruction:** 18,645 **linear feet**
*Road to be reconstructed (optional and required) but not abandoned*

**Abandonment:** _____ **linear feet**
*Abandonment of existing roads not reconstructed under the contract*

**Deactivation:** _____ **linear feet**
*Road to be made undriveable but not officially abandoned.*

**Pre-Haul Maintenance:** 749 **linear feet**
*Existing road to receive maintenance work (specifically required by the contract) prior to haul*

## Excise Tax Exempt Activities

**Temporary Optional Construction:** _____ **linear feet**
*Optional roads to be constructed and then abandoned*

**Temporary Optional Reconstruction:** _____ **linear feet**
*Optional roads to be reconstructed and then abandoned*

**New Abandonment:** _____ **linear feet**
*Abandonment of roads constructed or reconstructed under the contract*

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
PACIFIC CASCADE REGION

# THROW A BONE

ROAD PLAN

SECTION 2, 11, 13, 14, TOWNSHIP 10 NORTH, RANGE 08 WEST, W.M.
WAHKIAKUM COUNTY

PACIFIC DISTRICT

AGREEMENT NO.: 30-076144

CONTRACT ADMINISTRATOR: Larry Leach

DATE: 03/01/2004

STAFF ENGINEER: Charlie Hanlin

DRAWN & COMPILED BY: Alicia Compton

## SECTION 0 – SCOPE OF PROJECT

This project includes but is not limited to construction including:

landing construction.

This project also includes reconstruction including:

pulling ditches;
cleaning ditches;
acquisition and installation of additional drainage structures;
grading and shaping existing road surface and turnouts;
constructing additional turnouts;
acquisition and application of rock;
grass seeding.

This project also includes pre-haul maintenance including:

cleaning ditches.

## SECTION 1 - GENERAL CLAUSES

1.1-1
Clauses in this plan apply to all construction or reconstruction including landings unless otherwise noted.

1.1-2
Reconstruction of the following roads is required. All roads shall be reconstructed on the State's location and in accordance with this Road Plan.

| Road | Stations | Type |
|---|---|---|
| G-2100 | 0+00 to 157+95 | Reconstruction |
| G-2180 | 0+00 to 23+50 | Reconstruction |
| G-2180 Shoefly | 0+00 to 5+00 | Reconstruction |
| Spur 1 | 0+00 to 7+49 | Pre-haul maintenance |

1.1-4
If the Purchaser desires a road location or design change, a revised Road Plan shall be submitted to the State for consideration.

1.1-5

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to: solid subsurface rock, subsurface springs, saturated ground, and unstable soil.

1.1-7

Hauling of forest products or equipment may require a county road hauling permit. Purchaser is responsible for obtaining a permit, and any costs associated with extra maintenance or repair levied by a county.

1.2-1

The reconstruction of any roads specified herein shall not be permitted between September 30 and May 1 unless authority to do so is granted, in writing, by the Contract Administrator.

1.2-2

Purchaser shall not use roads reconstructed under this Road Plan for hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1.3-2

Roads are intended for dry weather use. Hauling shall be suspended when wheel track rutting exceeds 6 inches unless Purchaser elects to correct the situation at his/her own expense. Corrective measures and continued operations are subject to written approval by the Contract Administrator.

1.4-3

Reference points (R.P.'s) that are moved or damaged at any time during construction shall be reset in their original locations by the Purchaser. Excavation and embankment shall not proceed on road segments controlled by said R.P.'s until all moved or damaged R.P.'s are reset.

1.5-1

Maintenance on roads listed in Contract Clauses C-50 (Purchaser Road Maintenance and Repair) and C-60 (Designated Road Maintainer) shall be performed in accordance with Forest Access Road Maintenance Specifications.

## SECTION 4 - DEBRIS DISPOSAL AND REMOVAL

4.1-1

Right-of-way debris is defined as all nonmerchantable vegetative material larger than one cubic foot in volume, within the grubbing limits.

4.1-2

All right-of-way debris disposal shall be completed prior to the application of rock or timber haul.

4.2.3-1

Right-of-way debris shall be scattered.

4.2.3-3

Right-of-way debris shall not be placed against standing timber.

## SECTION 5 - EXCAVATION

5.1-1

Roads shall be reconstructed in accordance with dimensions shown on the TYPICAL SECTION SHEET.

5.1-7

Roads shall be reconstructed to the dimensions shown on the TYPICAL SECTION SHEET, within the tolerance listed below. Tolerance classes for each road are listed on the TYPICAL SECTION SHEET.

| Tolerance Class | A | B | C |
|---|---|---|---|
| Road Width (feet) | +1.5 | +1.5 | +2.0 |
| Subgrade elevation (feet +/-) | 0.5 | 1.0 | 2.0 |
| Centerline alignment (feet lt./rt.) | 1.0 | 1.5 | 3.0 |

5.1-8

Excavation slopes shall be constructed no steeper than shown on the following table:

| Material Type | Excavation Slope Ratio |
|---|---|
| Common Earth (on side slopes of 55%) | 1:1 |
| Common Earth (55% to 70% sideslopes) | ¾:1 |
| Common Earth (on slopes over 70%) | ½:1 |
| Fractured or loose rock | ½:1 |
| Hardpan or solid rock | ¼:1 |

5.1-11

Embankment slopes shall be constructed no steeper than shown on the following table:

| Material Type | Embankment Slope Ratio |
|---|---|
| Common Earth and Rounded Gravel | 1½:1 |
| Angular Rock | 1¼:1 |
| Sandy Soils | 2:1 |

5.1-12

Organic material shall be excluded from embankment as shown on the TYPICAL SECTION SHEET.

5.1-16

Turnout locations noted on this plan are approximate. Locations shall be adjusted to fit with final subgrade alignment and sight distances. Location shall be subject to written approval of the Contract Administrator.

5.1.1-2

Waste material shall not be deposited within 100 feet of a live stream.

5.1.1-7

On the following road, all excess excavated material shall be end hauled to designated waste areas.

End Haul/Waste Material Disposal

| Road | Stations | Waste Area Location |
|---|---|---|
| G-2100 | Culvert replacement locations | As designated by the Contract Administrator |

5.1.1-8

The amount of material to be contained in a waste area shall be at the discretion of the Contract Administrator.

5.1.2-1

Select borrow shall contain no more than 5% dirt, vegetative debris, or other waste material by volume.

5.1.2-2

Select borrow shall be used at the following locations:

| Road | Stations |
|---|---|
| G-2100 | All culvert replacements |

5.1.2-3

Select borrow may be obtained from any commercial source as approved by the Contract Administrator.

5.3-1

All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts.

5.4-1

Silt-bearing runoff shall not be permitted to go into streams.

5.4-3.1

On the following roads, Purchaser shall furnish and evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 50 pounds per acre. The date of application is subject to approval by the Contract Administrator.

| Mixture Percent by Weight | Minimum Percent Germination |
|---|---|
| 50% Fescue, Red | 90% Germination |
| 25% Ryegrass, Perennial | 90% Germination |
| 15% Bentgrass | 85% Germination |
| 10% Clover, White and White Dutch (inoculated) | 90% Germination |

Weed seed shall not exceed 0.5% by weight.

Seed shall be furnished in standard containers on which the following shall be shown:

1. Common name of seed
2. Net weight
3. Percent of purity
4. Percentage of germination
5. Percentage of weed seed and inert material

Required seed not spread by the termination of this contract shall become property of the State.

| Road | Stations | Seed Quantity (lbs) |
|---|---|---|
| G-2100 | Culvert replacement locations | 10 |

## SECTION 6 - DRAINAGE

6.2.1-1

Purchaser shall furnish, install, and maintain corrugated polyethylene pipe (AASHTO specification No. M-294 Type S) as designated on the CULVERT LIST. Culvert and flume lengths shall be varied to fit as-built conditions subject to written approval by the Contract Administrator.

6.2.1-2

Manufacturer's approved connectors shall be used for corrugated polyethylene pipe.

6.2.1-5

On required roads: culverts, downspouts, flumes, bands, and gaskets as listed on the CULVERT LIST which are not installed shall become property of the State.

6.2.2.1-1

Culvert, downspout, flume, and energy dissipator installation shall be in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings."

6.2.2.3-1

Cross drains and surface culverts on road grades in excess of 3% shall be skewed at least 30 degrees from perpendicular to the road centerline, except that cross drain culverts at the low points of dips in roads shall not be skewed.

6.2.2.3-2

Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3% nor more than 10%.

6.2.2.4-1

Installations of polyethylene tubing shall be subject to written approval of the Contract Administrator prior to making backfill.

6.2.2.5-1

Drainage structure outfalls shall not terminate directly on unprotected soil that will erode. Downspouts, flumes, and energy dissipators shall be installed to prevent erosion.

6.3-2

On the following roads, the Purchaser shall pull the ditches, reshape all culvert headwalls and catch basins, and clean the inlet and outlet of all culverts. Work shall be completed prior to application of rock and/or timber haul and shall be done in accordance with the TYPICAL SECTION SHEET and CULVERT AND DRAINAGE SPECIFICATION DETAIL.

| Road | Stations |
|---|---|
| G-2100 | 74+95 to 157+95 |
| G-2180 | 0+00 to 23+50 |
| G-2180 Shoefly | 0+00 to 5+00 |

6.4-1

Catch basins shall be constructed to resist erosion in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions: two feet wide and four feet long with backslopes consistent with Clause 5.1-8: Excavation Slopes.

## SECTION 7 - ROCK

7.1-6

Rock for reconstruction under this contract may be obtained from any commercial source as approved in writing by the Contract Administrator.

| Possible Source | Location |
|---|---|
| Naselle Rock | Naselle, Washington |

7.2.1.1-6

3 INCH MINUS CRUSHED ROCK

| | |
|---|---|
| % passing 3" square sieve | 100% |
| % passing 2" square sieve | 65 - 95% |
| % passing ¾" square sieve | 28 - 70% |
| % passing ¼" square sieve | 10 - 35% |
| % passing U.S. #200 sieve | 0 - 10% |

All percentages are by weight.

7.2.1.1-12

Landing rock shall be no coarser than 6 INCH MINUS.

7.2.3-4

Measurement of the3 INCH MINUS CRUSHED rock shall be accomplished with State certified platform scales provided by the Purchaser and meeting the following specifications:

a. The scales shall have an enclosed weatherproof room around the reading device.

b. The weighing mechanism shall contain a weight totalizer and ticket imprinter. A ticket for each truck shall be made and delivered to the Contract Administrator.

c. The totalizer calibration adjustment and ticket imprinter shall be furnished with a hasp to accept a State padlock.

7.4.2-1

Apply at least the minimum required rock quantity as shown on the ROCK LIST. Required rock shall meet the specifications on the ROCK LIST.

7.4.2-6

A grader shall be used to shape the existing surface prior to timber haul.

| Road | Stations |
|---|---|
| G-2100 | 0+00 to 157+95 |
| G-2180 Shoefly | 0+00 to 5+00 |

7.4.2-9

Turnouts shall have rock applied to the same depth and specifications as the traveled way.

7.4.2-11

Purchaser shall spot patch as directed by the Contract Administrator in accordance with quantities shown on ROCK LIST.

## SECTION 8 - STRUCTURES

8.4-8

During periods of hauling, Purchaser shall keep gates closed except for passing vehicles.

## SECTION 9 - ROAD AND LANDING DEACTIVATION

9.2-1

Purchaser shall reduce or relocate landing debris, in a manner approved, in writing, by the Contract Administrator, to avoid landing failures and potential debris slides.

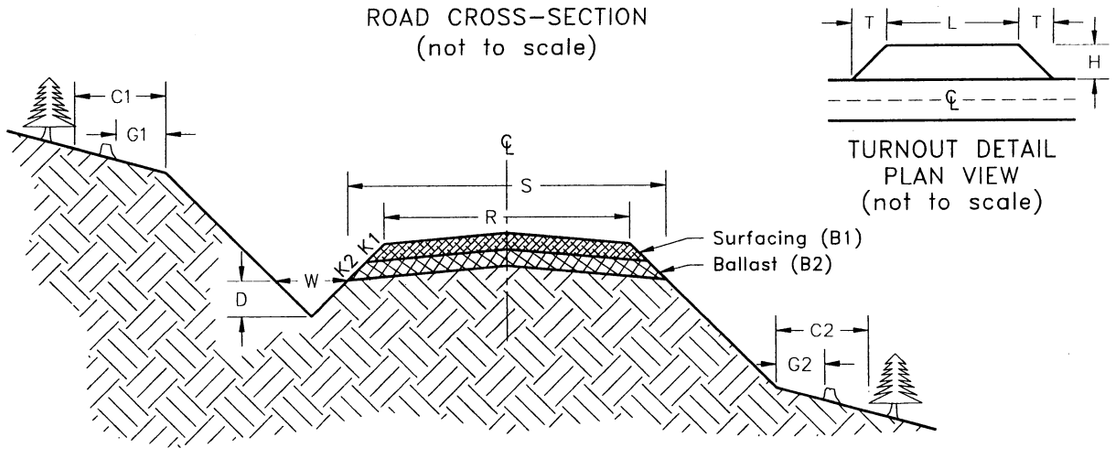
9.2-2

Purchaser shall provide for drainage of the landing surface as approved, in writing, by the Contract Administrator.

9.2-3

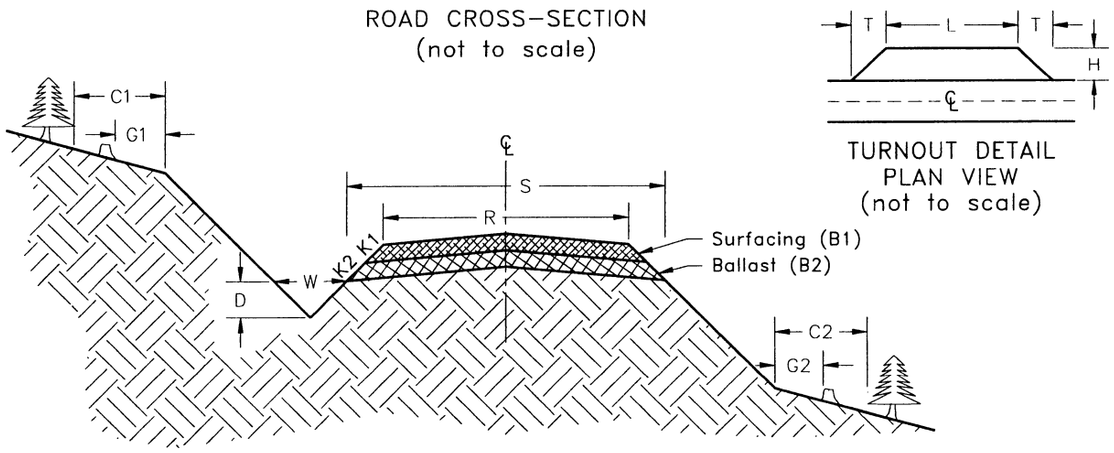
Landing embankments shall be sloped to original construction specifications.

# TYPICAL SECTION SHEET




| Road Number | From Station | To Station | Tolerance Class | Subgrade Width | Road Width | Ditch Width | Ditch Depth | Crown in. @ CL | Grubbing Limits | | Clearing Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | S | R | W | D | | G1 | G2 | C1 | C2 |
| G-2100 | 0+00 | 175+25 | C | - | 12' | 3' | 1' | 3" | - | - | - | - |
| G-2180 | 0+00 | 23+50 | C | - | 10' | 3' | 1' | 3" | - | - | - | - |
| G-2180 Shoefly | 0+00 | 5+00 | C | - | 10' | 3' | 1' | 3" | - | - | - | - |
| Spur 1 | 0+00 | 7+49 | C | - | 10' | 3' | 1' | 3" | - | - | - | - |

# ROCK LIST

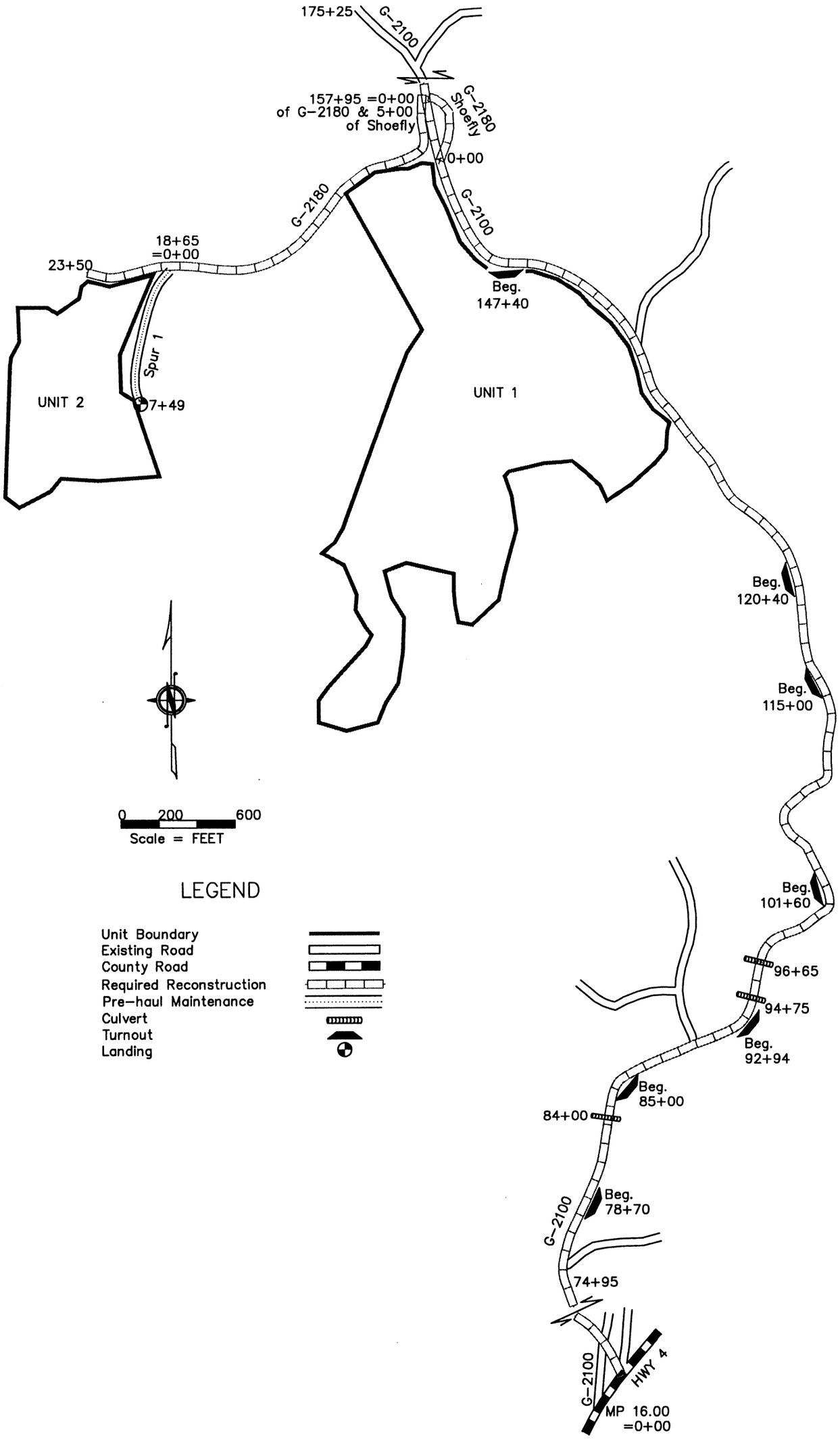



## BALLAST

| Road Number | From Station | To Station | Rock Slope | Compacted Rock Depth | C.Y./ Station | # of Stations | C.Y. Subtotal | Rock Source | Turnout | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Length | Width | Taper |
| | | | K2 | B2 | | | | | L | H | T |
| | | | | | 3 INCH MINUS CRUSHED | | | Any commercial source | | | |
| G-2100 | Turnouts (7) | | 2:1 | 9" | | | 147 | | 100' | 10' | 25' |
| G-2100 | Spot rock | | | | | | 600 | | | | |

3 INCH MINUS CRUSHED TOTAL 747 Cubic Yards

# THROW A BONE
## ROAD PLAN MAP



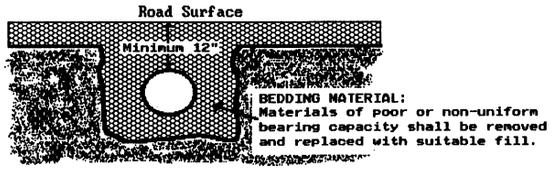
# CULVERT LIST

| Road Number | Location | Culvert Dia. | Culvert Gauge | Length (ft) Culvert | Length (ft) Downspt | Length (ft) Flume | Riprap (C.Y.) Inlet | Riprap (C.Y.) Outlet | Riprap (C.Y.) Type | Backfill Material | Placement Method | Const. Staked | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | If Steel | | | | | | | | | | |
| G-2100 | 84+00 | 18" | - | 36 | - | - | - | - | - | SB | - | - | Replace existing |
| | 94+75 | 18" | - | 38 | - | - | - | - | - | SB | - | - | Replace existing |
| | 96+65 | 18" | - | 40 | - | - | - | - | - | SB | - | - | Replace existing |

**Key:**

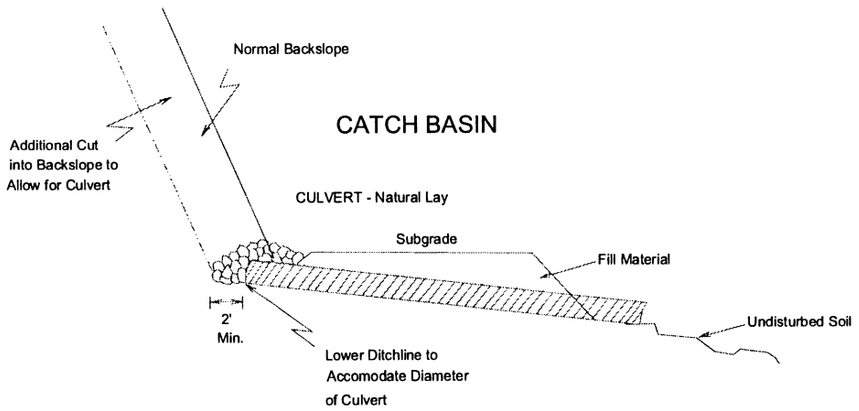
SB - Select Borrow
NT - Native (bank run)
SL - Select Fill
HL - Heavy Loose Riprap
LL - Light Loose Riprap
Flume - Half round pipe
Downspout - Full round pipe

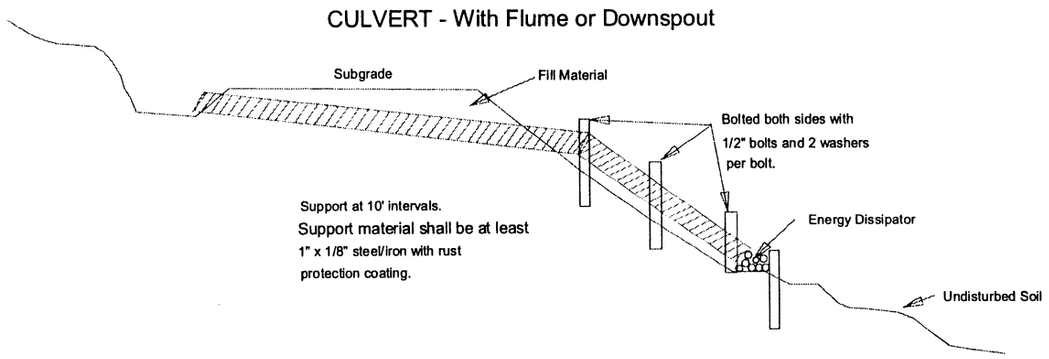
CULVERT BACKFILL AND BASE PREPARATION
(For culverts less than 36")



## CULVERT AND DRAINAGE SPECIFICATION DETAIL

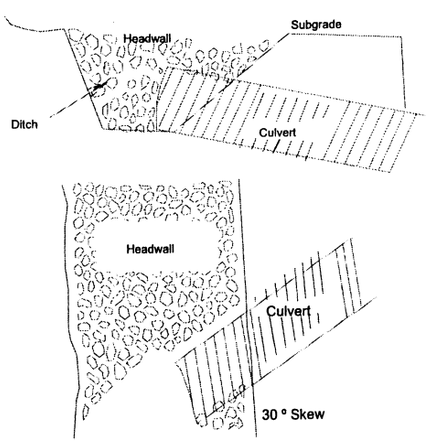
(Page 1 of 2)



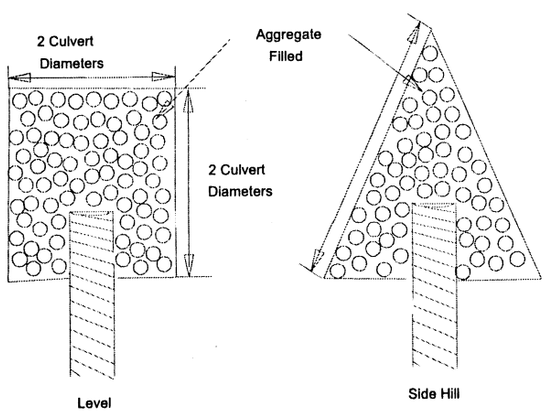

Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed so that the pipe is uniformly supported along the barrel.

HEADWALLS




Headwalls to be constructed of material that will resist erosion.

ENERGY




Dissipator Specifications:
Depth: 1 culvert diameter
Aggregate: as specified in the CULVERT LIST.

## CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 2)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

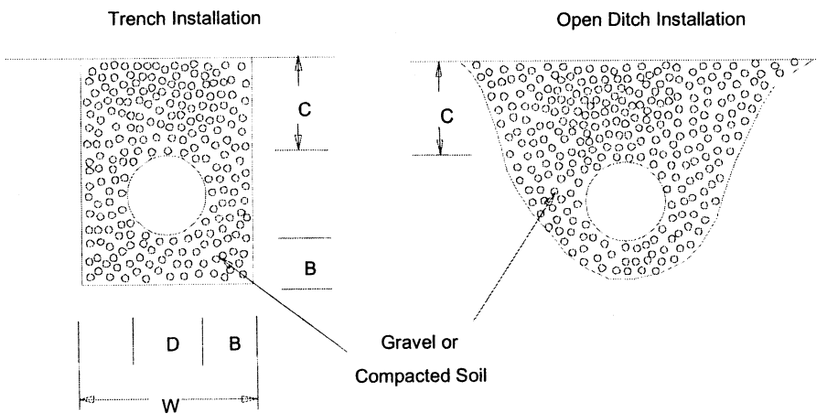
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

2. The corrugated pipe shall be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it shall be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.

3. Either crushed aggregate or flexible (asphalt) pavement may be laid as part of the minimum cover requirements.

4. Site conditions and availability of bedding materials often dictate the type of installation method used.

5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.




**MINIMUM DIMENSIONS**
Trench or Open Ditch Installation

| Nominal Diameter | Minimum Thickness | Minimum Cover | Min. Trench Width |
|---|---|---|---|
| D | B | C | W |
| 18" | 6" | 12" | 36" |
| 24" | 6" | 12" | 42" |
| 30" | 6" | 12" | 48" |
| 36" | 6" | 12" | 54" |

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

FOREST ACCESS ROAD
MAINTENANCE SPECIFICATIONS

1. CONSTRUCTION AND RECONSTRUCTION (Prior to acceptance to the contract or acceptance on a timber sale).

A. Cuts and Fills
   1. Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1½:1 slopes with selected material or as directed. Remove overhanging material from the cut slopes.
   2. Material from slides or other sources requiring removal shall not be deposited in streams or at locations where it will erode into streams or water courses.
   3. Undesirable slide materials and debris shall not be mixed into the surface material.

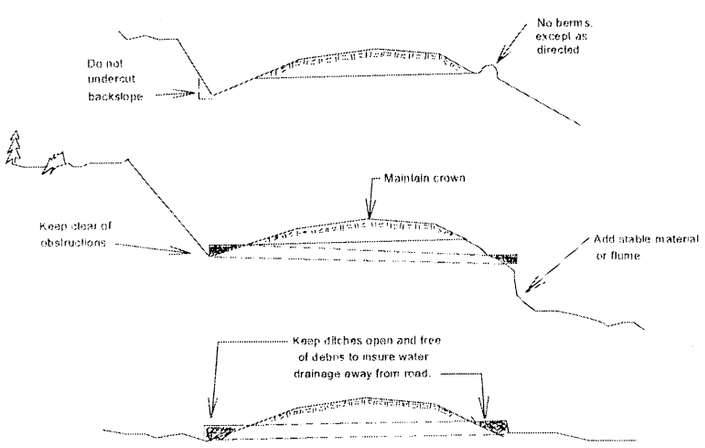
B. Surface
   1. Grade and shape the road surface, turnouts, and shoulders to the original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
   2. Blading must not undercut the backslope at the bottom of the ditchline or cut geotextile at centerline.
   3. Watering may be required to control dust and to retain fine surface rock.
   4. Desirable surface material shall not be bladed off the roadway.
   5. Replace surface material lost or worn away.
   6. Remove berms except as directed by the State.
   7. Barrel spread soft spots to prevent degradation of geotextile.

C. Drainage
   1. Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions and functioning as intended.
   2. Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This must be done even during periods of inactivity.
   3. Add stable material at the outlet end of the culvert as needed to stabilize the stream bed.
   4. Headwalls: maintain to the road shoulder level with material that will resist erosion.
   5. Keep silt bearing surface runoff from getting into live streams.

D. Structures
   Repair bridges, culverts, cattleguards, fences, and other road structures to the condition required by the construction specifications.

E. Termination of Use or End of Season
   Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch, and culvert cleaning and water bars.

F. Debris
   Remove fallen timber, limbs, and stumps from the slopes or roadway.



# DEPARTMENT OF NATURAL RESOURCES - CENTRAL REGION

FORM 9-87(Rev. 12-02)

## SUMMARY - Road Development Costs

DISTRICT: Pacific

SALE/PROJECT NAME: Throw a Bone CONTRACT NUMBER: 30-076144

LEGAL DESCRIPTION: Sections2,5 Township10 North, Range8 West W.M.

| | | | |
|---|---|---|---|
| ROAD NUMBER: | G2100 | 0 | G2180,Spur 1, G2180 Shoefly |
| ROAD STANDARD: | Mainline (14' R.S.) | Secondary Mainline (12' R.S.) | Spur road (10' R.S.) |
| NUMBER OF STATIONS: | 157.95 | 0.00 | 36.00 |
| SIDESLOPE: | 0 | 0 | 0 |
| DITCHING: | $4,739 | $0 | $3,191 |
| EXCAVATION AND FILL: | $0 | $0 | $0 |
| ROCK TOTALS (Cu. Yds.): | | | |
| Ballast: 147 | $4,139 | $0 | $0 |
| Surface: 600 | $9,300 | $0 | $0 |
| Riprap: 0 | $0 | $0 | $0 |
| CULVERTS AND FLUMES: | $1,375 | $0 | $0 |
| STRUCTURES: | $0 | $0 | $0 |
| GENERAL EXPENSES: | $1,955 | $0 | $383 |
| MOBILIZATION: | $575 | $0 | $575 |
| TOTAL COSTS: | $22,082 | $0 | $4,149 |
| COST PER STATION: | $140 | $0 | $115 |

NOTE: This appraisal has no allowance for profit and risk.

TOTAL (All Roads) = $26,231

SALE VOLUME MBF = 3,500

TOTAL COST PER MBF = $7.49

Plans to be furnished by:

Plan only: STATE

Plan-profile:

Compiled by: Hanlin Date: 03/04/04

Checked by: _____ Date: _____

Region Engineer: _____ Date: _____

Div of Engr.: _____ Date: _____

REMARKS: _____

_____

CENTRAL REGION - ROAD COST ESTIMATE

SALE NAME: Throw a Bone

CONTRACT NUMBER: 30-076144

I. CLEARING AND GRUBBING:

| | Flat Rate - | % Side Slope | MBF/ac | Disposal Factor | Production Factor | Cost/ Station | Width Factor | Total Stations | Sub Total |
|---|---|---|---|---|---|---|---|---|---|
| G2100 | | | | 1.00 | 1.00 | $30 | 1.00 | 157.95 | $4,739 |
| | | | | | | | | | $0 |
| | | | | | | | | | $0 |
| | | | | | | | | | $0 |
| | | | | | | | | | $0 |

Clear and Grub TOTAL = $4,739

II. DITCHING :

| | Flat Rate - | % Side Slope | Exc. Type Fact. | Production Factor | Cost/ Station | Width Factor | Total Stations | Sub Total |
|---|---|---|---|---|---|---|---|---|
| G2100 | | | 1.00 | | $88 | 1.00 | 157.95 | $0 |
| | | | | | | | 0.00 | $0 |
| | | | | | | | 0.00 | $0 |
| | | | | | | | 0.00 | $0 |
| | | | | | | | 0.00 | $0 |

| *End Haul, Over Haul, Large Fills/Cuts | Estimated Vol. (cy) | No. of Equip. Days | Cost/day | Sub Total |
|---|---|---|---|---|
| End Haul/ Over Haul | | | | $0 |
| Large Fills/ Cuts | | | | $0 |

Excavation TOTAL = $0

III. BALLAST AND SURFACING :

Ballast source: Commercial Source
Surface source:
Riprap source :

| Description | | | = cubic yards |
|---|---|---|---|
| Back fill (3"-) | 1 | 147.00 | 147 |
| Spot rock (3"-) | 1 | 600.00 | 600 |
| Riprap | | | |

| UNIT COSTS | Ballast | Surfacing | Riprap |
|---|---|---|---|
| Drill & Shoot | $0.00 | $0.00 | |
| Dig and load | $0.00 | $0.00 | |
| Crushing | $0.00 | $0.00 | |
| Purchase | $7.00 | $7.00 | |
| Haul * | $7.25 | $7.25 | $7.25 |
| Spread | $0.80 | $0.80 | |
| Compact | $0.45 | $0.45 | |
| Strip | | | |
| Reclamation | | | |
| TOTAL ($/cy) | $15.50 | $15.50 | $7.25 |

* Haul Formula: (R.T.Miles/MPH+Delay)($/hr / Cy/load)

| | |
|---|---|
| R.T. Miles = | 14.0 |
| Ave. Speed = | 15 |
| Delay (Hrs.)= | 0.2 |
| Cost / Hour = | $64.00 |
| CY / Load = | 10 |

| | | | | |
|---|---|---|---|---|
| Back fill (3"-) | 267 | Cu. yds @ | $15.50 /cu. yd = | $4,139 |
| Spot rock (3"-) | 600 | Cu. yds @ | $15.50 /cu. yd = | $9,300 |
| Riprap | 0 | Cu. yds @ | $7.25 /cu. yd = | $0 |

Rock total = $13,439

IV. CULVERTS AND FLUMES:

| Description | Qty. | Gauge | Diameter | No/Length | Installed Cost/ft | Sub-total |
|---|---|---|---|---|---|---|
| CPP | 1 | | 18 | 36 | $11.80 | $425 |
| | 1 | | 18 | 38 | $11.80 | $448 |
| | 1 | | 18 | 40 | $11.80 | $472 |
| Bands & Gaskets | 3 | | | 1 | $9.90 | $30 |

Culvert total = $1,375

V. STRUCTURES

| Description | Type | Width | Length | Cost/ft. | Sub-total |
|---|---|---|---|---|---|
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |

Structure total = $0

Sub-TOTAL = $19,552

VI. GENERAL EXPENSES: Overhead & General Exp. Add 10% $1,955

VII. MOBILIZATION:

* Move in costs are averaged over all three sheets.

| Description | $ per Move | # of Moves | Sub-total |
|---|---|---|---|
| Dump Trucks | 100 | 3 | $300 |
| Grader | 400 | 1 | $400 |
| | | | $0 |
| Excavator | 450 | 1 | $450 |
| | | | $0 |
| | | | $0 |
| | | | $0 |
| | | | $0 |

Total Mobilization = $1,150

Mobilization sub-total = $575

Road No. G2100
Standard: Mainline (14' R.S.)
Stations: 157.95

SHEET TOTAL = $22,082

By: Hanlin



Date: 03/04/04

CENTRAL REGION - ROAD COST ESTIMATE

SALE NAME: Throw a Bone

CONTRACT NUMBER: N/A

I. CLEARING AND GRUBBING:

| Flat Rate - | % Side Slope | MBF/ac | Disposal Factor | Production Factor | Cost/ Station | Width Factor | Total Stations | Sub Total |
|---|---|---|---|---|---|---|---|---|
| 0 | 30% | 35 | 1.00 | 3.90 | $40 | 1.00 | 0.00 | $0 |
| | 40% | 35 | 1.00 | 4.29 | $40 | 1.00 | 0.00 | $0 |
| | 50% | 35 | 1.00 | 4.70 | $40 | 1.00 | 0.00 | $0 |
| | 60% | 35 | 1.00 | 6.15 | $40 | 1.00 | 0.00 | $0 |

Clear and Grub TOTAL = $0

II. EXCAVATION:

| Flat Rate - | % Side Slope | Exc. Type Fact. | Production Factor | Cost/ Station | Width Factor | Total Stations | Sub Total |
|---|---|---|---|---|---|---|---|
| 0 | 30% | 1.00 | 2.50 | $88 | 1.00 | 0.00 | $0 |
| | 40% | 1.00 | 4.56 | $88 | 1.00 | 0.00 | $0 |
| | 50% | 1.00 | 6.85 | $88 | 1.00 | 0.00 | $0 |

| *End Haul, Over Haul, Large Fills/Cuts | Estimated Vol. (cy) | No. of Equip. Days | Cost/day | Sub Total |
|---|---|---|---|---|
| End Haul/ Over Haul | 5000 | 8 | $0 | $0 |
| Large Fills/ Cuts | 3000 | 5 | $0 | $0 |

Excavation TOTAL = $0

III. BALLAST AND SURFACING :

Ballast source: commercial source
Surface source: commercial source
Riprap source : commercial source

| Description | cu.yds/sta | x stations = | cubic yards |
|---|---|---|---|
| Ballast (4"-) | 51 | 0.00 | 0 |
| Surfacing (2 1/2"-) | 30 | 0.00 | 0 |
| Riprap | | | |

| UNIT COSTS | Ballast | Surfacing | Riprap |
|---|---|---|---|
| Drill & Shoot | $2.50 | $2.50 | |
| Dig and load | $1.00 | $1.00 | |
| Crushing | $2.50 | $3.25 | |
| Purchase | | | |
| Haul * | $1.69 | $1.69 | $1.69 |
| Spread | $0.80 | $0.80 | |
| Compact | $0.45 | $0.45 | |
| Strip | | | |
| Reclamation | | | |
| TOTAL ($/cy) | $8.94 | $9.69 | $1.69 |

* Haul Formula: (R.T.Miles/MPH+Delay)($/hr / Cy/load)

| | | | | | |
|---|---|---|---|---|---|
| R.T. Miles = | 6.0 | | | | |
| Ave. Speed = | 25 | Ballast (4"-) | 0 Cu. yds @ | $8.94 /cu. yd = | $0 |
| Delay (Hrs.)= | 0.2 | Surfacing (2 1/2 | 0 Cu. yds @ | $9.69 /cu. yd = | $0 |
| Cost / Hour = | $77.00 | Riprap | 0 Cu. yds @ | $1.69 /cu. yd = | $0 |
| CY / Load = | 20 | | | | |

Rock total = $0

IV. CULVERTS AND FLUMES:

| Description | Qty. | Gauge | Diameter (in.) | No/Length (ft) | Installed Cost/ft | Sub-total |
|---|---|---|---|---|---|---|
| | 0 | na | 18 | 36 | $11.80 | $0 |
| | 0 | 14 | 24 | 50 | $16.70 | $0 |
| | 0 | 14 | 36 | 50 | $25.30 | $0 |

Bands & Gaskets: 0 - 18"@$9.90ea,0 -24" @ $13.20 ea.0 - 36" @ $24.15 ea — $0

Culvert total = $0

V. STRUCTURES

| Description | Type | Width | Length | Cost/ft. | Sub-total |
|---|---|---|---|---|---|
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |

Structure total = $0

Sub-TOTAL = $0

VI. GENERAL EXPENSES: Overhead & General Exp. Add 12% $0

VII. MOBILIZATION:

* Move in costs are averaged over all three sheets.

| Description | $ per Move | # of Moves | Sub-total |
|---|---|---|---|
| Dump Trucks | $100 | 0 | $300 |
| Grader | $400 | 0 | $400 |
| 0 | $0 | 0 | $0 |
| Excavator | $450 | 0 | $450 |
| 0 | $0 | 0 | $0 |
| 0 | $0 | 0 | $0 |
| 0 | $0 | 0 | $0 |
| 0 | $0 | 0 | $0 |

Total Mobilization = $1,150 Mobilization sub-total =

Road No. 0
Standard: Secondary Mainline (12' R.S.)
Stations: 0.00

SHEET TOTAL = $0

By: Hanlin



Date: 03/04/04

CENTRAL REGION - ROAD COST ESTIMATE

SALE NAME: Throw a Bone

CONTRACT NUMBER: 30-076144

I. CLEARING AND GRUBBING:

| Flat Rate - | % Side Slope | MBF/ac | Disposal Factor | Production Factor | Cost/ Station | Width Factor | Total Stations | Sub Total |
|---|---|---|---|---|---|---|---|---|
| G2180,Spur 1, G2180 Shoefly | 20% | 35 | 1.00 | 2.77 | $32 | 1.00 | 36.00 | $3,191 |
| | 30% | 35 | 1.00 | 3.90 | $32 | 0.80 | 0.00 | $0 |
| | 40% | 35 | 1.00 | 4.29 | $32 | 0.80 | 0.00 | $0 |
| | 50% | 35 | 1.00 | 4.70 | $32 | 0.80 | 0.00 | $0 |

Clear and Grub TOTAL = $3,191

II. EXCAVATION:

| Flat Rate - | % Side Slope | Exc. Type Fact. | Production Factor | Cost/ Station | Width Factor | Total Stations | Sub Total |
|---|---|---|---|---|---|---|---|
| G2180,Spur 1, G2180 Shoefly | 20% | 1.00 | 2.00 | $66 | 0.50 | 36.00 | $0 |
| | 30% | 1.00 | 2.50 | $66 | 0.50 | 0.00 | $0 |
| | 40% | 1.00 | 4.56 | $66 | 0.50 | 0.00 | $0 |
| | 50% | 1.00 | 6.85 | $66 | 0.50 | 0.00 | $0 |

| *End Haul, Over Haul, Large Fills/Cuts | Estimated Vol. (cy) | No. of Equip. Days | Cost/day | Sub Total |
|---|---|---|---|---|
| End Haul/ Over Haul | 0 | 0 | $0 | $0 |
| Large Fills/ Cuts | 0 | 0 | $0 | $0 |

Excavation TOTAL = $0

III. BALLAST AND SURFACING :

Ballast source:
Surface source:
Riprap source :

| Description | cu.yds/sta | x stations = | cubic yards |
|---|---|---|---|
| Ballast (4"-) | 0 | 36.00 | 0 |
| Surfacing (2 1/2"-) | 0 | 36.00 | 0 |
| Riprap | | | |

| UNIT COSTS | Ballast | Surfacing | Riprap |
|---|---|---|---|
| Drill & Shoot | $2.50 | | |
| Dig and load | $1.00 | | |
| Crushing | $2.50 | | |
| Purchase | | | |
| Haul * | $1.08 | $1.08 | $1.08 |
| Spread | $0.80 | | |
| Compact | $0.45 | | |
| Strip | | | |
| Reclamation | | | |
| TOTAL ($/cy) | $8.33 | $1.08 | $1.08 |

* Haul Formula: (R.T.Miles/MPH+Delay)($/hr / Cy/load)

| | | | | | |
|---|---|---|---|---|---|
| R.T. Miles = | 2.0 | | | | |
| Ave. Speed = | 25 | Ballast (4"-) | 0 Cu. yds @ | $8.33 /cu. yd = | $0 |
| Delay (Hrs.)= | 0.2 | Surfacing (2 1/2 | 0 Cu. yds @ | $1.08 /cu. yd = | $0 |
| Cost / Hour = | $77.00 | Riprap | 0 Cu. yds @ | $1.08 /cu. yd = | $0 |
| CY / Load = | 20 | | | | |

Rock total = $0

IV. CULVERTS AND FLUMES:

| Description | Qty. | Gauge | Diameter (in.) | No/Length (ft) | Installed Cost/ft | Sub-total |
|---|---|---|---|---|---|---|
| | 0 | na | 18 | 36 | $11.80 | $0 |
| Bands & Gaskets | | | 3 - 18"@$9.90ca | | | $0 |

Culvert total = $0

V. STRUCTURES

| Description | Type | Width | Length | Cost/ft. | Sub-total |
|---|---|---|---|---|---|
| | | | | | $0 |
| | | | | | $0 |
| | | | | | $0 |

Structure total = $0

Sub-TOTAL = $3,191

VI. GENERAL EXPENSES: Overhead & General Exp. Add 12% $383

VII. MOBILIZATION:

* Move in costs are averaged over all three sheets.

| Description | $ per Move | # of Moves | Sub-total |
|---|---|---|---|
| Dump Trucks | 100 | 0 | $300 |
| Grader | 400 | 1 | $400 |
| 0 | 0 | 0 | $0 |
| Excavator | 450 | 0 | $450 |
| 0 | 0 | 0 | $0 |
| 0 | 0 | 0 | $0 |
| 0 | $0 | 0 | $0 |
| 0 | $0 | 0 | $0 |

Total Mobilization = $1,150 Mobilization sub-total = $575

Road No. 0
Standard: Secondary Mainline (12' R.S.)
Stations: 0.00

SHEET TOTAL = $4,149

By: Hanlin



Date: 03/04/04